

# National guidance for the recovery of elective surgery in children

## [Health Policy team](#)

The COVID-19 pandemic has resulted in the cessation of all but the most urgent elective children's surgical cases during the period of peak prevalence of infection in the general population.

These recommendations use the most up to date evidence to inform practice that will enable recovery of children's elective surgery.

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## Background, aim and scope

**Background:** The COVID-19 pandemic has resulted in the cessation of all but the most urgent elective children's surgical cases during the period of peak prevalence of infection in the general population. In the period March to May 2020 over 50,000 children in England had surgery from all surgical specialties postponed. There is an urgent requirement to re-establish elective children's surgical services.

**Aim:** To provide guidance on evidence-based practice that will enable recovery of children's elective surgery.

**Scope:** This guidance has been developed by the following organisations: NHS England, Public Health England, the Royal College of Surgeons of England, Royal College of Anaesthesia, Royal College of Paediatrics and Child Health, the Children's Surgical Forum, British Association of Paediatric Surgeons, Association of Paediatric Anaesthetists of Great Britain and Ireland, and The Association for Perioperative Practice.



While some recommendations focus on the systems organised in England, services in the devolved nations are encouraged to adopt them to fit local models.

## Summary of recommendations

1. Prioritisation of surgical cases should be undertaken according to clinical urgency.
2. Theatre scheduling should take into account the additional time that may be needed to perform a case, but ensure that the list is used effectively and efficiently.
3. All children and household members should undergo additional pre-operative virtual/telephone screening 24-72 hours pre-operatively **and** at admission, specifically asking about symptoms suggestive of COVID-19 infection, including temperature, new cough, coryzal symptoms, lethargy and new shortness of breath, along with a temperature check at admission. If symptoms are present in either the child or household members, the procedure should be delayed until a later date allows, and advice given according to Government guidelines about COVID-19 testing and self-isolation. If the condition for which surgery is required does not allow a delay, a discussion about the decision making around this should occur within a multidisciplinary team and the family. The patient and family members should be treated according to the local hospital COVID-19 positive patient pathway if the procedure goes ahead.
4. All families should receive or have access to guidance and advice about the infection control processes associated with elective procedures considering COVID-19. ([Download our guidance for parents/carers, young people and children below.](#))
5. Pre-operative isolation is **not** recommended as a routine practice for children undergoing elective surgery.
6. During 'green' and 'amber' periods, a single pre-operative swab should be taken within

72 hours before admission and preferably as close to the time of surgery as possible. Ideally this occurs on the day of surgery, although it is recognised that access to point of care tests is currently severely limited. The rationale for performing this test is to reassure theatre staff, although there is still a risk of the patient developing COVID-19 during their inpatient stay. During 'red' periods, two pre-operative swabs taken 72-96 hours apart are recommended. However, it is recognised that this is not feasible for emergency surgery.

7. Units with large catchment areas should identify systems to facilitate local testing. An example of such a system is NHS number 119, where parents can arrange drive-through or walk-through testing in the 72 hours prior to admission by dialling 119 and explaining that their child has an upcoming procedure. This will enable more equitable access to secondary and tertiary healthcare, particularly for families who are geographically distant to the hospital or who are reliant on public transport for the journey to the hospital.
8. Children and their parents/carers should have the opportunity to discuss the procedure prior to elective admission and have access to written information. During the discussion, it should be explained that there is a small chance of the child and/or parent/carer acquiring COVID-19 in hospital. Whenever possible, consent will be taken prior to admission.
9. Resident carers should be minimised as far as possible with ideally one accompanying each child to the hospital for a day-case procedure. When children require an inpatient stay, local policy should be followed, with an emphasis on resident carers being able to change but ideally just with other resident carers from the same household. Ideally the resident carer does not have a co-morbidity which requires shielding; this should be discussed at the pre-operative assessment.
10. All resident carers should wear a face covering while in hospital if away from their bed-space. Variations in local policy should be taken into account.
11. 'Hot' and 'cold' operating sites are **not** mandatory for children undergoing elective procedures. However, any location used for paediatric anaesthesia and surgery must be compliant with the [RCoA Guidance for the provision of paediatric anaesthesia services 2020](#) throughout the patient pathway.
12. Cubicles should be prioritised for children and accompanying parents with co-morbidities for whom shielding is required.
13. Healthcare workers should wear droplet precaution PPE (personal protective equipment, ie facemask) when they attend to a patient, in keeping with Public Health England (PHE) guidance.
14. Healthcare workers and porters who transfer a patient to theatre should wear droplet precaution PPE, in keeping with PHE guidance.
15. A theatre team briefing should include a discussion about anticipated transmission risk related to the procedure (including any aspects that are aerosol generating) to guide staff choices regarding PPE. Ensuring that theatre staff who need to wear aerosol PPE receive adequate rest periods should be included in the team briefing.
16. The [World Health Organization \(WHO\) check](#) should be completed for every patient, with recommended droplet precaution PPE for health care workers and face coverings for resident carers.
17. The accompanying parent/carer and nurse can stay with their child for the beginning of the anaesthetic without alteration to the normal hospital policy with the aerosol generating procedure (AGP) being delayed until they leave the anaesthetic room.
18. Healthcare workers within the anaesthetic room during the AGP and the five

subsequent air changes are recommended to wear airborne PPE. The minimum PPE requirement during intubation of a child undergoing elective surgery is an FFP3 mask (or equivalent), eye protection and gloves.

19. A transfer of the patient from the anaesthetic room to theatre should not be delayed for air changes.
20. Hospital policy should follow PHE guidance regarding classification of AGPs and use of PPE in the recommended settings.
21. Healthcare workers in theatre at the time of extubation should be kept to a safe minimum and should wear airborne precaution PPE. The minimum PPE requirement during extubation of a child undergoing elective surgery is an FFP3 mask (or equivalent), eye protection and gloves.
22. Laryngeal mask airways (LMAs) or equivalent can be removed in recovery if the attending healthcare worker (HCW) is wearing airborne precaution PPE (minimum FFP3 mask, visor and gloves) and the patient can be distanced at least two metres away from other patients or the curtains drawn around at the time of LMA removal.
23. Oropharyngeal airways can be removed in recovery by a healthcare worker wearing droplet precaution PPE.
24. Environmental cleaning of theatre can be commenced by HCWs wearing airborne precaution PPE (minimum FFP3 mask, visor and gloves) after three air changes following the last AGP performed or by HCWs wearing droplet precaution PPE after five air changes following the last AGP.
25. Consistent messaging regarding hand washing, social distancing and face coverings should be maintained throughout the hospital to reinforce that these infection prevention and control measures are the most effective way of reducing the transmission of COVID-19.
26. Normal post-operative observations and care pathways should be followed.
27. Rapid discharge after day case procedures should be supported and encouraged.
28. Children and resident carers do **not** need to self-isolate after discharge from hospital unless they have been diagnosed with COVID-19.
29. Virtual or telephone clinics should be supported by the trust to improve access to healthcare for all patients and to reduce the number of children who need to return to the hospital for outpatient review.
30. Surveillance of nosocomial outbreaks and monitoring of outcomes of children after surgery should be undertaken by each Trust.
31. If a child undergoes an elective procedure within 14 days of a positive swab for SARS-CoV-2, it is recommended they are reported to the [www.covidinchildren.co.uk](http://www.covidinchildren.co.uk) database to enable monitoring of outcomes.
32. National monitoring of elective surgery activity including the rates of cancellations, the incidence of COVID-19 before and after elective surgery and the clinical course of children undergoing elective procedures with COVID-19 should be undertaken.
33. PHE will formally review the level of risk (red/amber/green) according to regional variation each week. PHE to communicate the regional prevalence rates/level of risk each Friday to the NHS England Children and Young People programme board, who in turn will distribute this to the 10 Operational Delivery Networks (ODNs) across England for them to cascade to hospitals. These data will also be distributed to the Chief Medical Officers of the devolved nations.

## Background and rationale

The COVID-19 pandemic has resulted in the cessation of all but the most urgent elective children's surgical cases during the period of peak prevalence of infection in the general population. In the period March to May 2020 over 50,000 children in England had surgery from all surgical specialties postponed. There is an urgent requirement to re-establish elective children's surgical services.

There is now an enormous excess of children requiring elective operations and waiting far longer than the recommended 16 week limit for a procedure that may be needed to improve conditions that are symptomatic, affect their quality of life or have a risk of complication if not operated on.

Feedback from parents reveals that COVID-19 has had an impact on the way that children and young people and their families view hospital care during the pandemic.\* Many are concerned about being a burden to an overstretched NHS and some have turned down elective procedures because of this. Many also describe a feeling of anxiety when they come to hospital as they are aware that there is a higher risk of developing COVID-19 in hospital and that they will often be mixing with other people much more than they have in the preceding few months. There is anxiety that other families visiting the hospital may not follow the guidance about social distancing and wearing face coverings, too. Some children, young people and families have expressed concern about the privacy and confidentiality that surrounds virtual consultations and have highlighted the need for respectful and private conversations.

These concerns need to be addressed in any guidance relating to resumption of elective surgery in children.

National survey data demonstrate considerable variation between hospitals in terms of the infection control measures they have for children undergoing elective surgery. Many hospitals have based their pathways on national guidance originating from the [Royal College of Surgeons of England](#) and [Public Health England](#). These pathways do not reflect the differences between adults and children in terms of COVID-19 infection and in addition offer little guidance for parents or carers.

This was the rationale for reviewing the paediatric literature and drafting these consensus recommendations.

## Principles

- The safety of children, their families and staff is paramount.
- Recommendations are to be equitable irrespective of socioeconomic status, ethnicity, or geographic location. No child should be left behind as a consequence of these recommendations.
- Recommendations are evidence-based and may change as evidence and experience evolves.
- Recommendations are to be responsive to the prevalence of COVID-19 in the community.

# Summary of COVID-19 in children evidence

## Epidemiology and the risk of being infected

Children <18 years old have accounted for a minority of detected cases of COVID-19 worldwide to date, usually accounting for between 1 and 5% of total cases, depending on national testing strategies (those which have been more focussed on testing the most unwell have the smallest numbers of children). Where more granular detail is available, there has been a “U shaped” distribution of acute case detection, with cases more frequently detected in infants and older adolescents; approximately 1/3 of detected cases have been in adolescents aged 15 – 18 years.<sup>1</sup>

Widespread sero-surveillance has emerged from several countries including Spain, Switzerland, Germany and Italy, which have all reported reduced seropositive cases in children compared to adults (eg in Spain ranging from 1% positivity in <1 year, to 3% in those aged 5 to 9 year, ~4% in those aged 10 - 19 years, increasing to 6.9% in those aged 70 - 74 years). It still remains unclear to what degree their lower seropositivity is due to being less susceptible to infection, or due to reduced exposure (lockdown).<sup>2</sup>

## Clinical course

There is a strong age gradient in severity of illness and risk of death<sup>3</sup> and as demonstrated in the below table.<sup>4</sup>

|                  | Deaths | Laboratory-confirmed cases* | Case fatality ratio   |                        |  | Infection fatality ratio†  |
|------------------|--------|-----------------------------|-----------------------|------------------------|--|----------------------------|
|                  |        |                             | Crude                 | Adjusted for censoring | Adjusted for censoring, demography, and under-ascertainment‡ |                            |
| Overall          | 1023   | 44 672                      | 2.29% (2.15-2.43)     | 3.67% (3.56-3.80)      | 1.38% (1.23-1.53)  | 0.657% (0.389-1.33)        |
| Age group, years |        |                             |                       |                        |  |                            |
| 0-9              | 0      | 416                         | 0.000% (0.000-0.883)  | 0.0954% (0.0110-1.34)  | 0.00260% (0.000312-0.0382)                                   | 0.00161% (0.000185-0.0249) |
| 10-19            | 1      | 549                         | 0.182% (0.00461-1.01) | 0.352% (0.0663-1.74)   | 0.0148% (0.00288-0.0759)                                     | 0.00695% (0.00149-0.0502)  |
| 20-29            | 7      | 3619                        | 0.193% (0.0778-0.398) | 0.296% (0.158-0.662)   | 0.0600% (0.0317-0.132)                                       | 0.0309% (0.0138-0.0923)    |
| 30-39            | 18     | 7600                        | 0.237% (0.140-0.374)  | 0.348% (0.241-0.577)   | 0.146% (0.103-0.255)   | 0.0844% (0.0408-0.185)     |
| 40-49            | 38     | 8571                        | 0.443% (0.314-0.608)  | 0.711% (0.521-0.966)   | 0.295% (0.221-0.422)   | 0.161% (0.0764-0.323)      |
| 50-59            | 130    | 10 008                      | 1.30% (1.09-1.54)     | 2.06% (1.74-2.43)      | 1.25% (1.03-1.55)  | 0.595% (0.344-1.28)        |
| 60-69            | 309    | 8583                        | 3.60% (3.22-4.02)     | 5.79% (5.20-6.34)      | 3.99% (3.41-4.55)  | 1.93% (1.11-3.89)          |
| 70-79            | 312    | 3918                        | 7.96% (7.13-8.86)     | 12.7% (11.5-13.9)      | 8.61% (7.48-9.99)  | 4.28% (2.45-8.44)          |
| ≥80              | 208    | 1408                        | 14.8% (13.0-16.7)     | 23.3% (20.3-26.7)      | 13.4% (11.2-15.9)  | 7.80% (3.80-13.3)          |

Key Findings From the Chinese Center for Disease Control and Prevention Report

As a result, the clinical impact of COVID-19 disease in children has been extremely limited worldwide. There has been a handful of deaths reported, and only 70 PICU (Paediatric Intensive Care Unit) admissions in the UK during the peak of the pandemic.<sup>5</sup> Not all those admissions were necessarily due to COVID-19. Severity matches case detection, with more PICU admissions in infants or very young children and adolescents. The clinical presentation is like adults, with primarily upper/lower respiratory tract symptoms, although they tend to be much milder. It is believed that a significant proportion of children develop no, or subclinical symptoms, but the true number is unknown. A recent sero-survey and symptom study in London found 40% of children to be truly asymptomatic.



Newborns have had reported infection with COVID-19, including testing positive within 12 hours of birth, indicating perinatal transmission or even intra-uterine transmission. In general neonates have also had a relatively uneventful course, with a small number needing respiratory support.

## Transmission

Details regarding the role of children in transmission of COVID-19 are still emerging. Children appear to have had a limited role in transmission during the pandemic to date, based on the results of numerous contact tracing studies and the evidence of lower rates of infection in sero-surveillance studies. Household contact tracing data has consistently found children are less likely to acquire COVID-19 from an infected household member than adults within the same household (roughly by half, or less).<sup>6</sup>

There have been very few examples of a child as an index cases identified, so determining how infectious a child is to others once infected is challenging. Data from some laboratory studies have shown children to have viral loads similar to that of adults, however the number of children included tend to be very small, and there are concerns they are not representative of the wider population of children with COVID-19. Some studies have shown lower viral loads in children.

## Outcomes of children with COVID-19 during the peri-operative period

Although data suggest a significant mortality and morbidity in adults with peri-operative SARS-CoV-2 infection, there are minimal data on the outcomes of children who have undergone surgery when they have had COVID-19 in the peri-operative period. The COVIDSurg study<sup>7</sup> included 56 people under 30 years of age who were either SARS-CoV-2 positive on reverse transcriptase polymerase chain reaction (rt-PCR) or had a high clinical suspicion of COVID-19 based on clinical and/or radiological features between 7 days before surgery and 30 days after surgery. There was no mortality in this group but 30% were described as having pulmonary complications. Personal communication with the same group report that they now have 89 children recorded in their data collection tool with one paediatric death. The results are currently under further analysis and being prepared for publication.

Further detailed data are available from the [Public Health England paediatric surveillance of COVID-19](#) where six children were diagnosed with COVID-19 up to 14 days pre-operatively, none post-operatively. All children survived and, while two required respiratory support, this was not out-with the expected course for their condition. There is no data of any neonates with COVID-19 requiring an operation to date.

Great Ormond Street report that in the three months from March to May they have performed 13 procedures on 11 children who were SARS-CoV-2 positive. These children followed the expected course for their condition.

For updated summaries of the paediatric evidence, see [Don't Forget the Bubbles evidence summary](#) and [RCPCH evidence summaries](#).

## Community and hospital prevalence of COVID-19

The community prevalence of COVID-19 is currently low, with an estimated 0.09% of the population currently infected (calculated 3 July 2020); in children the prevalence is lower than this. At present, the prevalence of COVID-19 in hospitals is significantly higher than that in the community, so by entering a hospital, a patient (and their parent) becomes at higher risk of infection. Currently, healthcare workers are more likely to contract COVID-19 from their colleagues rather than from patients or parents, with a prevalence in healthcare settings of approximately 2.8%. However, if community prevalence increases significantly, the risk profile to patients and healthcare workers (HCW) shifts to the patients being more likely to infect the HCW.

There is currently an expectation that the prevalence of COVID-19 will remain low in the immediate future, but it is recognised that there may be local variation and that rates may increase in the winter months. PHE England and the Office for National Statistics (ONS) track week-on-week data to look at the prevalence of COVID-19 over time. PHE data systems are sufficiently robust to pick up these changes in growth and there is confidence that they will be able to alert local healthcare systems.

## Assessing level of risk of performing elective surgery in children and amending infection control processes accordingly

We recommend that a green / amber / red system based on accurate community prevalence rates is implemented to denote the risk level of performing elective surgery in children:

|              |   |
|--------------|---|
| <b>Green</b> | Low levels of COVID-19 in community (prevalence < 0.5%) with a doubling time of over 10 days  |
| <b>Amber</b> | Low to moderate levels of COVID-19 in community (prevalence ?0.5% but <2%) with a doubling time of 5-10 days  |
| <b>Red</b>   | Moderate to high levels of COVID-19 in community (prevalence ?2%) AND/OR a doubling time <5 days. Associated with exponential growth in number of cases |

The table below shows how prevalence has changed between the initial peak (23 March 2020) and the current time (as of 3 July 2020). Prevalence level partitions for red, amber and green based on regional data from the peak and the most recent estimates. Data compiled by Public Health England.

| Geography | Population | Daily cases |          | 23 March (peak) |                |     | 3 July (most recent) |                |       |
|-----------|------------|-------------|----------|-----------------|----------------|-----|----------------------|----------------|-------|
|           |            | 0.5% prev.  | 2% prev. | Cases (RTM)     | Est. prev. (%) | RAG | Cases (RTM)          | Est. prev. (%) | RAG   |
| England   | 56,286,961 | 28,143      | 112,574  | 349,000         | 6.20           | Red | 5,270                | 0.09           | Green |



| Geography                | Population | Daily cases |        | 23 March (peak) |       |       | 3 July (most recent) |      |       |
|--------------------------|------------|-------------|--------|-----------------|-------|-------|----------------------|------|-------|
|                          |            |             |        |                 |       |       |                      |      |       |
| East England             | 6,236,072  | 3,118       | 12,472 | 32,900          | 5.28  | Red   | 501                  | 0.08 | Green |
| London                   | 8,961,989  | 4,481       | 17,924 | 145,000         | 16.18 | Red   | 586                  | 0.07 | Green |
| Midlands                 | 10,769,965 | 5,385       | 21,540 | 63,000          | 5.85  | Red   | 1,150                | 0.11 | Green |
| North East and Yorkshire | 8,172,908  | 4,086       | 16,346 | 31,600          | 3.87  | Red   | 831                  | 0.10 | Green |
| North West               | 7,341,196  | 3,671       | 14,682 | 36,800          | 5.01  | Red   | 809                  | 0.11 | Green |
| South East               | 9,180,135  | 4,590       | 18,360 | 30,900          | 3.37  | Red   | 611                  | 0.07 | Green |
| South West               | 5,624,696  | 2,812       | 11,249 | 9,470           | 1.68  | Amber | 57                   | 0.01 | Green |

Infection control recommendations should be amended in real time to reflect the level of risk. The recommendations below relate to the infection control measures required during periods of low prevalence (green). Although no change in infection control measures is required when prevalence rises to amber levels, there is an expectation that the situation is monitored closely in case the prevalence continues to rise to red rates. In this situation, there will likely be a marked reduction in elective activity within hospitals. In addition, PHE will notify NHSE and ODNs if there are any localised 'hotspots' within regions where increased vigilance is required.

#### Actions:

- Public Health England / NHSE: Formal weekly review of the level of risk according to regional and local variation by Public Health England. Public Health England to communicate the regional prevalence rates/level of risk each Friday to the NHSE CYP programme board, who in turn will distribute this to the 10 Operational Delivery Networks across England for them to cascade to hospitals. These data will also be distributed to the Chief Medical Officers of the devolved nations.
- Providers: Pre-operative practices around COVID-19 should alter according to a green / amber / red system based on regional and local variation. Hospitals will be expected to take account of these local variations and update their local risk assessments accordingly.

## Recommendations

### Theatre list planning

Management of the theatre waiting list will be determined by multiple factors including the

clinical urgency of the procedure, changes in the clinical condition which have occurred between listing of a case and the time of operation, pre-operative assessment and (non-COVID) investigations which are required and taking consent. This is because the clinical indications for some procedures may have changed as a result of the positive impact of lockdown on children's health, eg reduced upper respiratory infections. In addition, adjustments in the planning of the theatre list may be required to consider additional protective measures in theatre, primarily the time required for air changes after airway manipulation.

Guidance on the recovery of surgical services and on the clinical urgency of the procedure has been published by the Royal College of Surgeons of England<sup>8</sup>:

|                          |  |
|--------------------------|--|
| <b>Priority level 1a</b> | Emergency - operation needed within 24 hours       |
| <b>Priority level 1b</b> | Urgent - operation needed within 72 hours          |
| <b>Priority level 2</b>  | Surgery that can be deferred for up to 4 weeks     |
| <b>Priority level 3</b>  | Surgery that can be delayed for up to 3 months     |
| <b>Priority level 4</b>  | Surgery that can be delayed for more than 3 months |

During 'green' periods cases of category 1, 2, 3 and 4 urgency can be undertaken. During 'amber' periods cases of category 1, 2 and 3 urgency can be undertaken, and in 'red' periods this is likely to be restricted to category 1 and 2.

### Recommendations

- Prioritisation of surgical cases should be undertaken according to clinical urgency.
- Theatre scheduling should take into account the additional time that may be needed to perform a case but ensure that the list is used effectively and efficiently.

### Actions

- Providers: Local hospital policy will enable effective theatre list management to ensure that children can be operated on according to clinical urgency, within the context of changes due to the local, regional and national levels of, and response to, COVID-19.

## Pre-admission

### 1. Pre-assessment and information for parents and managing expectations

The group agreed that pre-assessment of children undergoing surgery would improve the efficiency of surgical lists as well as reducing the rate of on the day cancellations. The aim of pre-assessment is twofold: to determine the need for pre-operative investigations and/or optimisation; and assessing the risk of the patient or family member having COVID-19. The former is likely to be embedded within hospital policy but use of teleconferencing or

telephone screening may need to be employed, along with advice in line with hospital policy about attending for pre-operative investigations. The latter is expected to be an additional formal process which is performed 48 hours prior to admission and at the time of admission. Some hospitals have implemented a policy of screening patients and their accompanying family member in the hospital car park, including a temperature check, which was felt to be an optimal model, if possible.

Pre-assessment offers an opportunity to provide the child and family with clear information about the infection control processes involved in the admission - [download our posters for parents, children and young people below](#). During this discussion, it should be explained to the family that there is a small chance of the child and/or parent/carer acquiring COVID-19 in hospital. This is an opportunity to reiterate the importance of parents/carers adhering with infection prevention practices in hospital. It was agreed that a parent information resource would be developed to support this.

It was recognised within the group that pre-operative information for parents is essential and Dr Perkins mentioned that the Royal College of Anaesthetists are contributing to documents for this purpose. This information should reflect the need for hospital practices to adapt to external changes, particularly as community prevalence changes. ([Download our posters for parents, children and young people below](#).)

### **Recommendation**

- All children and household members should undergo additional pre-operative virtual/telephone screening both 24-72 hours pre-operatively and at admission, specifically asking about symptoms suggestive of COVID-19 infection including temperature, new cough, coryzal symptoms, lethargy and new shortness of breath, along with a temperature check at admission. If symptoms are present in either the child or household members, the procedure should be delayed until a later date allows and advice given according to government guidelines about COVID-19 testing and self-isolation. If the condition for which surgery is required does not allow a delay, a discussion about the decision making around this should occur within a multidisciplinary team and the family. The patient and family members should be treated according to the local hospital COVID-19 positive patient pathway if the procedure goes ahead.

### **Actions**

- Providers: To establish a safe and effective method of screening patients and their household members pre-operatively for symptoms and signs of COVID-19, preferably prior to physical entry into the hospital.

### **Recommendation**

- All families should receive or have access to guidance and advice about the infection control processes associated with elective procedures considering COVID-19. ([Download our posters for parents, children and young people below.](#))

### **Actions**

- Providers: To signpost parents and children to accurate information about the infection control processes in place related to COVID-19 at the time they are booked for a procedure. This can be provided on-line and/or by post. Provider specific information may also be produced and delivered about local hospital policy including local pre-operative processes, use of kitchen facilities and parent accommodation.

## **2. Pre-operative isolation**

Current practice in most institutions for adults and children is to enforce 14 days of shielding prior to a planned operation. However, the impact of complete shielding on a family is significant and includes children not being able to attend school, parents not being able to go out to work and loss of any local support network. In addition, anecdotal data suggest that adherence to even short periods (<72 hours) of recommended isolation is poor and therefore cannot be relied upon.

The rationale for pre-operative isolation is that most individuals with COVID-19 develop symptoms within 7 days of becoming infected and the vast majority within 14 days. However, children cannot isolate within a silo and there is the risk of sequential transmission within a household during the period of isolation, potentially resulting in the child becoming infected by another family member just days before their operation.

PHE modelling data suggest that during periods of low community prevalence, isolation has very little impact on the risk of a child being infected at the time of admission to hospital. For this reason, the group agreed that during periods of low to moderate prevalence (green and amber), the harms of pre-operative isolation (reduced access to education, impact on parental employment) outweigh the potential benefits in terms of reducing the risk of being infected with COVID-19 at the point of admission to hospital. It is anticipated that during red periods only category 1 and 2 cases will be performed which will often not enable 2 weeks of pre-operative isolation to occur; it is therefore not mandated for these children and their household members.

### **Recommendation**

- Pre-operative isolation is not recommended as a routine practice for children undergoing elective surgery.

### **3. Pre-operative SARS-CoV-2 testing**

Reverse transcriptase polymerase chain reaction (RT-PCR) performed on a single swab of throat then nose looking for SARS-CoV-2 is the recommended test for diagnosing acute COVID-19.<sup>9</sup> It has a high analytical sensitivity and can detect low levels of SARS-CoV-2 with good reproducibility.

However, from a clinical perspective, SARS-CoV-2 is more commonly detected in the lower respiratory tract, meaning that combined throat and nose swabbing may not detect SARS-CoV-2 in a person who has COVID-19, with an estimated sensitivity of 80%.<sup>10</sup> In addition, studies show that SARS-CoV-2 can continue to be detected for a prolonged period after clearance of the active virus, demonstrated by the inability to replicate the virus in a laboratory after detection of SARS-CoV-2 with RT-PCR.<sup>11</sup> This gives the potential for both false negative results (the test is negative but the patient does have COVID-19) and false positive results (the test is positive but the patient has cleared the infection and is no longer infective).<sup>12</sup> When the community prevalence level is low, there is a possibility that the false positive rate is higher than the true positive rate, meaning that some patients will not be able to undergo an elective procedure, even though they do not have COVID-19.

SARS-CoV-2 testing is currently performed 24-72 hours prior to admission for a procedure in the context of advice that the family should continue to shield between the test being taken and the time of operation. Due to the potential for onward transmission, even during shielding as discussed above, there is the possibility that a child could contract COVID-19 between the time of the test and the time of the operation. Therefore, the optimal time to perform a perfect test (100% sensitivity and specificity) is directly before commencing a procedure. Point of care testing for SARS-CoV-2 is available and is seen as the 'gold standard' but is currently significantly limited. This may change over time.

In view of the potential for false positive and false negative RT-PCR results in the context of low community level of COVID-19, a single pre-operative test in an asymptomatic child is reported to have a 40% chance of predicting whether they develop COVID-19 during their admission. The addition of a second test 72-96 hours later increases the predictive power to

80%. However, in the context of very low community levels of COVID-19, the rate of detection of asymptomatic SARS-CoV-2 infection in a child is very low. For this reason, the group felt that there was no strong rationale for performing pre-operative testing prior to elective surgery in children during period of low / low-moderate prevalence.

However, a number of informal surveys of multidisciplinary healthcare workers (HCWs) in theatre clearly demonstrate that the absence of a negative pre-operative COVID-19 swab result would result in HCWs having a much lower threshold for donning airborne PPE including for non-AGPs. In addition, it is recognised that a single pre-operative nasopharyngeal swab is recommended for adult patients undergoing elective surgery; a different protocol for adults and children regarding swabbing could generate unnecessary concern for staff, particularly when children and adults are cared for on the same site.

It was also discussed whether two negative pre-operative COVID-19 swabs would reduce the need for PPE for aerosol generating procedures (AGPs) in children. Performing two pre-operative swabs increases the probability of detection of infection, when the infection was picked up prior to the first test, giving more certainty that a child is truly negative. However, when prevalence levels are low the pre-test probability for having COVID-19 gives an acceptable re-assurance to allow admission. As prevalence increases, the pre-test probability of infection and exposure (where infection is not yet detectable) and infected states is improved by the use of two swabs separated by a suitable time interval when isolation is observed in this time interval. The group felt that at this current time, as there remained a minimum requirement for FFP3 masks, eye protection and gloves for any AGPs being performed, in line with PHE guidance, regardless of pre-operative swabbing, there was little additional benefit in performing two pre-operative swabs.



As the prevalence of COVID-19 is higher in adults, and particularly HCWs, the messaging to parents should address their concerns about this. The routine pre-operative swabbing of parents/carers who attend with a child was discussed but was felt to be of little benefit during times of low community prevalence (green/amber). The need for fastidious infection prevention and control measures, in particular hand washing, wearing face coverings and socially distancing, should be re-enforced prior to and during the admission as this is the key to preventing spread of COVID-19 in the hospital.

### **Recommendation**

- During 'green' and 'amber' periods, a single pre-operative swab should be taken within 72 hours before admission and preferably as close to the time of surgery as possible. Ideally this would occur on the day of surgery, although it is recognised that access to point of care tests is currently severely limited. The rationale for performing this test is to reassure theatre staff, although there is still a risk of the patient developing COVID-19 during their inpatient stay.
- During 'red' periods, two pre-operative swabs taken 72-96 hours apart are recommended. However, it is recognised that this is not feasible for emergency surgery.

### **Recommendation**

- Units with large catchment areas should identify systems to facilitate local testing. An example of such a system is the NHS number 119, where parents can arrange drive-through or walk-through testing in the 72 hours prior to admission by dialling 119 and explaining that their child has an upcoming procedure. This will enable more equitable access to secondary and tertiary healthcare, particularly for families who are geographically distant to the hospital or who are reliant on public transport for the journey to the hospital.

### **Action**

- Provider / ODNs

## **4. Pre-admission consent**

It is good practice for the risks and benefits of any procedure to be discussed in detail before the day of admission for a procedure. Many clinicians use this opportunity to take consent, allowing time for questions and providing written information for the child and parent/carer. The Royal College of Surgeons of England has published dedicated guidance on consent to treatment while COVID-19 is still prevalent in society.<sup>13</sup> Virtual consultations may impact on the ability to take written consent for procedures prior to admission.

While some hospitals now have the facility to take 'eConsent', this is not available for many. Nevertheless, families should have the opportunity to discuss the details, risks and benefits

of a procedure prior to admission including receiving online, electronic or paper information about the procedure whenever possible (resources include [EIDO Healthcare Inform](#)). During the consent process, it should be explained that there is a small chance of the child and/or parent/carer acquiring COVID-19 in hospital.

### **Recommendation**

- Children and their parents/carers should have the opportunity to discuss the procedure prior to elective admission and have access to written information. During the discussion, it should be explained that there is a small chance of the child and/or parent/carer acquiring COVID-19 in hospital. Whenever possible, consent will be taken prior to admission.

## **Peri-operative considerations**

### **1. Number of parents/carers per child**

Each child who attends for an elective procedure is expected to be accompanied by a parent/carer, called a “resident carer” here on in. One resident carer is expected to attend for a child undergoing a day case procedure. For children who require an inpatient stay the local visiting policy should be followed by resident carers. The epidemiological risk of having COVID-19 is approximately the same for all members of the same household. Therefore, changing resident carers who live in the same house does not increase the risk of exposing HCWs or other resident carers to COVID-19.

Keeping the number of resident carers at the bed space and within the hospital to a minimum enables effective social distancing to protect the child, parent/carer and HCWs. Ideally the accompanying resident carer will not have any co-morbidities which require shielding, and this should be discussed during the pre-operative assessment. If the accompanying resident carer has a co-morbidity for whom shielding is recommended, every effort should be made to accommodate the child and adult in a cubicle.

Resident carers will be expected to wear a face covering when they are not at the bed space.

If the two parents/carers live in different households, then only one parent/carer should remain during the admission. If the inpatient admission is prolonged, local guidance should be followed in terms of swapping between parents/carers from two different households.

### **Recommendation**

- Resident carers should be minimised as far as possible with ideally one accompanying each child to the hospital for a day case procedure. When children require an inpatient stay, local policy should be followed, with an emphasis on resident carers being able to change but ideally just with other resident carers from the same household. Ideally the resident-carer does not have a co-morbidity which requires shielding; this should be discussed at the pre-operative assessment.

## 2. Face coverings for children and adults attending hospital for elective procedures

Face coverings, along with physical distancing and eye protection are effective methods of reducing the transmission of viruses<sup>14</sup> and hospitals now require adult visitors to wear face coverings during their visit.<sup>15</sup> It is recognised that children under the age of 10 may find it difficult to wear a face covering but many younger children may tolerate this and encouragement of the use of face coverings for children aged 5 and over is reasonable. Some older children, for example those with learning and behavioural difficulties, may struggle to tolerate a face covering.

Resident carers are expected to wear a face covering throughout their child's stay in hospital whenever they are away from the bed space. It was felt by the group that the child should not be asked to wear a mask while in hospital, although it was recognised that some children may want to.

### Recommendation

- All resident carers should wear a face covering while in hospital if away from their bed space. Variations in local policy should be taken into account.

## 3. Place of admission

Many adult hospital trusts have embraced a surgical pathway which includes using 'hot' and 'cold' sites. The number of children with COVID-19 has been very low<sup>16</sup> and, as described above, the peri-operative risk that COVID-19 poses in children is significantly lower than in adults.<sup>7</sup> The utility of hot and cold sites is therefore minimal for children and was felt by the group not to be necessary. However, it is recognised that some trusts may opt to utilise the same model of hot and cold sites for children and adults. Any location used for paediatric anaesthesia and surgery must be compliant with the [RCoA Guidance for the provision of paediatric anaesthesia services 2020](#) throughout the patient pathway.

Children undergoing elective surgery may be admitted to a day case or inpatient bed. Although it is preferable that each child and carer is situated within a cubicle at each stage of their inpatient stay, it is recognised that this is not feasible in many settings. When the number of cubicles is limited, children and parents with co-morbidities which require shielding should be prioritised.

Within a day case and inpatient unit, a minimum distance of 1 metre between beds is mandatory<sup>17</sup> and 2 metres is preferable. Consideration of parents who are accompanying and staying over with their children should also be taken to enable them to physically distance from other people.

### Recommendations

- 'Hot' and 'cold' operating sites are not mandatory for children undergoing elective procedures. However, any location used for paediatric anaesthesia and surgery must be compliant with the [RCoA Guidance for the provision of paediatric anaesthesia services 2020](#) throughout the patient pathway.
- Cubicles should be prioritised for children and accompanying parents with co-morbidities for whom shielding is required.

## 4. Pre-operative and post-operative reviews by all healthcare workers

Healthcare workers have the highest prevalence of COVID-19 and therefore need to take adequate precautions to reduce the risk of transmission to children and their parents/carers. Droplet precaution personal protective equipment (PPE) in the form of a facemask is recommended for all interactions between families and healthcare workers in the pre-operative and post-operative period. The normal pre-operative checks by anaesthetists, surgeons and admitting nurse should be undertaken, in addition to the COVID-19 specific recommendations above.

### Recommendation

- Healthcare workers should wear droplet precaution PPE (facemask) when they attend to a patient, in-keeping with PHE guidance.

## 5. Transfer to theatre

Ideally children will be transferred directly from their inpatient or day case ward to the anaesthetic room for the theatre that will be used for their procedure. It is recognised that in some hospitals a waiting area outside theatre may be used to improve patient flow. Hospital porters and accompanying health care workers will be expected to wear droplet precaution PPE during patient transfers.

### Recommendation

- Healthcare workers and porters who transfer a patient to theatre should wear droplet precaution PPE, in-keeping with PHE guidance.

## Intra-operative considerations

### 1. Theatre briefing and World Health Organisation check

Each theatre list should commence with a full-team briefing about each patient on the list. This should include a discussion about any aerosol generating procedures and when airborne precaution PPE is recommended and for whom. It was noted that HCWs can have different perceptions of risk and therefore the need for PPE for different procedures. It was recommended by the group that HCWs should be encouraged to wear the minimum recommended level of PPE but that if HCWs feel more comfortable escalating their PPE (eg to wearing an FFP3 mask) this should be an individual choice. The WHO check should be completed for every patient in line with hospital policy. Resident carers should wear a face covering when appropriate.

#### Recommendations

- A theatre team briefing should include a discussion about anticipated transmission risk related to the procedure (including any aspects that are aerosol generating) to guide staff choices regarding PPE. Ensuring that theatre staff who need to wear aerosol PPE receive adequate rest periods should be included in the team briefing.
- The WHO check should be completed for every patient with recommended droplet precaution PPE for health care workers and face coverings for resident carers.

### 2. Induction of anaesthesia

Healthcare workers who are in the anaesthetic room at the time of any aerosol generating procedure (AGP) should be limited to essential members of the team only, preferably just anaesthetist, operating department practitioner +/- member of theatre team. All healthcare workers in the anaesthetic room at the time of AGP should wear airborne precaution PPE to reduce their risk of exposure to COVID-19. It was agreed by the group that the minimum requirement for airborne PPE is an FFP3 mask (or equivalent), eye protection and gloves.

The accompanying parent/carer and nurse can stay with their child for the beginning of the anaesthetic without alteration to the normal hospital policy with the AGP being delayed until they leave the anaesthetic room.

There should be a delay of five air changes between the end of the AGP occurring and the entry of other staff into the anaesthetic room who are not wearing airborne precaution PPE.<sup>18</sup> A transfer of the patient from the anaesthetic room to theatre should not be delayed for air changes as air should not be passing from the anaesthetic room to theatre and therefore not a risk to people in theatre, who will already be wearing droplet precaution PPE.

Induction and maintenance of anaesthetic and pre-operative procedures including nerve blocks, epidurals, line insertion and urinary catheter insertion should be performed without alteration to the anaesthetist's normal practice.

### Recommendations

- The accompanying parent/carer and nurse can stay with their child for the beginning of the anaesthetic without alteration to the normal hospital policy with the AGP being delayed until they leave the anaesthetic room.
- Healthcare workers within the anaesthetic room during the aerosol generating procedure and the 5 subsequent air changes are recommended to wear airborne PPE. The minimum PPE requirement during intubation of a child undergoing elective surgery is an FFP3 mask (or equivalent), eye protection and gloves.
- A transfer of the patient from the anaesthetic room to theatre should not be delayed for air changes

### 3. PPE requirements for theatre staff

Public Health England updated the PPE guidance for AGPs on 18 June 2020.[19](#)

All non-airway staff can wear droplet precaution PPE **unless** the following AGPs are being performed:

- Respiratory tract suctioning (this does not include closed suctioning)
- Bronchoscopy
- Manual ventilation
- Tracheal intubation and extubation
- Tracheotomy or tracheostomy procedures (insertion or removal)
- Upper ENT airway procedures that involve suctioning
- Upper gastro-intestinal endoscopy where there is open suctioning of the upper respiratory tract
- High speed cutting in surgery/post mortem procedures if this involves the respiratory tract or paranasal sinuses
- Dental procedures using high speed devices such as ultrasonic scalers and high speed drills
- Non-invasive ventilation (NIV); Bi-level Positive Airway Pressure Ventilation (BiPAP) and Continuous Positive Airway Pressure Ventilation (CPAP)
- High Frequency Oscillatory Ventilation (HFOV)
- Induction of sputum using nebulised saline
- High flow nasal oxygen (HFNO)

Other procedures or equipment may generate an aerosol from material other than patient secretions but are not considered to represent a significant infectious risk. This includes laparoscopic surgery and diathermy.



These recommendations apply to children undergoing elective procedures requiring anaesthesia – they are not necessarily applicable to community and other similar settings.

### **Recommendation**

- Hospital policy should follow PHE guidance regarding classification of AGPs and use of PPE in the recommended settings.

## **4. Extubation, removal of laryngeal mask airways (LMAs or equivalent) and oropharyngeal airways**

Currently in many centres extubation and removal of laryngeal mask airways (LMAs) (or equivalent) are performed in theatre as they are considered to be AGPs. Prior to the COVID-19 pandemic it was usual practice for LMAs to be removed in recovery, enabling smooth progression of the theatre list. The group felt that this change in practice is a major contributor to reduced list productivity.

All members of the group agreed that extubation should continue to be performed in theatre with the safe minimum number of healthcare workers present. All healthcare workers present in theatre at the time of extubation are expected to wear airborne precaution PPE. The group agreed that the minimal PPE requirement during extubation of a child undergoing elective surgery is an FFP3 mask (or equivalent), eye protection and gloves. Movement of a patient from theatre to recovery should not be delayed for air changes within theatre, as the air leaving the theatre will be significantly diluted and will not be a risk to other members of staff outside theatre who should be wearing droplet precaution PPE as standard.

Removal of LMAs is also an AGP, along with the suctioning that goes with it. The anaesthetists and theatre staff representatives in the meeting felt that it is appropriate to remove an LMA in recovery if the HCW/recovery staff is wearing airborne precaution PPE with a minimum of an FFP3 mask, eye protection and gloves and if the patient can be distanced a minimum of 2 metres away from others or the curtains can be pulled around them. Local risk assessment is recommended.

Oropharyngeal airways (such as Guedel airways) often remain in situ when a patient enters recovery. Removal of these is not deemed as aerosol generating and they can be removed in the recovery suite by a healthcare worker who is wearing droplet precaution PPE.

Waiting for five air changes prior to cleaning commencing is the second major factor that affects list efficiency. It is noted that five air changes should occur after the last AGP, which for some children may be a significant proportion of time before they actually leave theatre, enabling cleaning to occur as soon as a patient leaves. Reducing the number of air changes required was discussed and it is noted that this is being done in some centres. In the absence of robust data or a change in national guidance by PHE, it was not felt to be appropriate to reduce the number of air changes required by the group but is recommended that HCWs wearing airborne precaution PPE could enter and commence cleaning after 3 air changes. Organisations must establish the number of air changes in their operating theatres and anaesthetic rooms.

### **Recommendations**

- Healthcare workers in theatre at the time of extubation should be kept to a safe minimum and should wear airborne precaution PPE. The minimum PPE requirement during extubation of a child undergoing elective surgery is an FFP3 mask (or equivalent), eye protection and gloves.
- Laryngeal Mask Airways or equivalent can be removed in recovery if the attending HCW is wearing airborne precaution PPE (minimum FFP3 mask, visor and gloves) and the patient can be distanced at least 2 metres away from other patients or the curtains drawn around at the time of LMA removal.
- Oropharyngeal airways can be removed in recovery by a healthcare worker wearing droplet precaution PPE.
- Environmental cleaning of theatre can be commenced by HCWs wearing airborne precaution PPE ((minimum FFP3 mask, visor and gloves) after 3 air changes following the last AGP performed or by HCWs wearing droplet precaution PPE after five air changes following the last AGP.

## **Post-operative and discharge considerations**

### **1. Post-operative monitoring and ongoing care**

Normal post-operative care should be undertaken according to local policy. The recommendations regarding hand washing, social distancing and wearing face coverings, as described above, should be followed and signs to reinforce the messaging around social distancing and wearing of masks are recommended. The need for these measures between healthcare workers and resident carers, healthcare workers and healthcare workers and resident carers with other resident carers should be made clear.

### **Recommendations**

- Consistent messaging regarding hand washing, social distancing and face coverings should be maintained throughout the hospital to reinforce that these infection prevention and control measures are the most effective way of reducing the transmission of COVID-19.
- Normal post-operative observations and care pathways should be followed.

## **2. Discharge from day surgery and inpatient beds**

Discharge after day case surgery should focus on safe recovery with effective discharge processes in place including early preparation of take-home medications, discharge letters and follow-up arrangements to avoid delays in discharge. Resident carers should be given clear safety netting advice about return with contact numbers of the ward to feel secure in early discharge. A focus on safe, rapid discharge will enable fewer patients and resident carers to remain in a day surgery ward at any one time, will allow more effective social distancing and will enable smooth patient flow for effective use of theatre lists.

Isolation after discharge from hospital could have two utilities. The first is to reduce the risk of a child who has just undergone surgery contracting COVID-19. The second is to reduce the community transmission of COVID-19 after children and resident carers have stayed in hospital where the prevalence of COVID-19 is higher than in the community. When community levels of COVID-19 are low, the risk of contracting the infection is low and the risk of transmission can be effectively reduced by following the guidance around hand washing, distancing and face coverings. When community levels are higher it is likely that local restrictions will be enforced to keep people at home, effectively isolating children who have undergone surgery. For this reason, the group did not feel it necessary for children and resident-carer to self-isolate after discharge from hospital; instead they should be advised to follow current government rules about socialising, distancing and wearing face coverings in public places. Written or online information which can be given to families at discharge would support these messages.

If children require readmission within 14 days of discharge it is advised that they should ideally be cared for in a cubicle due to the slightly higher risk of contracting COVID-19 while in hospital and should be swabbed for COVID-19 on admission to hospital.

Families should be asked to monitor for symptoms of COVID-19 after discharge from hospital. If they develop symptoms they should access local testing and follow national guidance about household isolation.

### **Recommendations**

- Rapid discharge after day case procedures should be supported and encouraged.
- Children and resident-carer do not need to self-isolate after discharge from hospital unless they have been diagnosed with COVID-19.

### **3. Follow-up**

Whenever possible children should be followed-up by teleconference or telephone consultation to avoid the need to keep returning to hospital and the time away from work and school that travel requires, to avoid the costs of travel and to reduce the risk of exposure to COVID-19. Virtual consultations should occur in areas which ensure privacy and confidentiality for the children and families. In the experience of clinicians in the meeting virtual consultations should also not be expected to give high-quality images which enable wound review.

Children and families who do need to attend outpatient clinic, for example for wound review or examination, or Accident and Emergency for a complication, should be advised to wear face coverings and to socially distance, as described above.

### **Recommendation**

- Virtual or telephone clinics should be supported by the trust to improve access to healthcare for all patients and to reduce the number of children who need to return to the hospital for outpatient review.

### **4. Monitoring**

Having active surveillance systems in place will allow the safety of these recommendations to be evaluated and amendments made in a timely fashion. Staff may also feel more confidence in adopting these recommendations in the knowledge that outcomes are being actively monitored.

### Recommendations

- Surveillance of nosocomial outbreaks and monitoring of outcomes of children after surgery should be undertaken by each trust.
- If a child undergoes an elective procedure within 14 days of a positive swab for SARS-CoV-2, it is recommended they are reported to the [www.covidinchildren.co.uk](http://www.covidinchildren.co.uk) database to enable monitoring of outcomes.
- National monitoring of elective surgery activity including the rates of cancellations, the incidence of COVID-19 before and after elective surgery and the clinical course of children undergoing elective procedures with COVID-19 should be undertaken

## Methodology for developing recommendations

Key stakeholders representing national groups (NHS England, Public Health England, Royal College of Paediatrics and Child Health, Royal College of Anaesthetists, Association of Paediatric Anaesthetists of Great Britain and Ireland, British Association of Paediatric Surgeons, Association of Perioperative Practice), professional groups (paediatric infectious diseases, infection control, paediatric surgery, paediatric anaesthesia, theatre staff, virology and epidemiology) and parents was identified to support the development of these recommendations. The devolved nations were represented.

The group met virtually on 25 June 2020 and again on 2 July. The current evidence about COVID-19 in children regarding incidence, prevalence, co-morbidities and surgical outcomes was initially reviewed. The current prevalence data were discussed and the modelling tools used to determine the risk of contracting COVID-19 in the community and hospital were described. Each step in the elective surgical pathway (Figure 1) were discussed systematically by the group prior to developing consensus recommendations and actions.

**Figure 1. Children's elective surgical pathway**

| Pre-admission | Pre-op | Peri-op | Post-op |
|---------------|--------|---------|---------|
|---------------|--------|---------|---------|

|  |  |   |  |
|--|--|---|--|
| <ul style="list-style-type: none"> <li>• Pre-assessment <ul style="list-style-type: none"> <li>◦ Information for parents / expectations</li> </ul> </li> <li>• Isolation pre-op <ul style="list-style-type: none"> <li>◦ How long</li> <li>◦ Who needs to isolate</li> </ul> </li> <li>• COVID screening pre-op <ul style="list-style-type: none"> <li>◦ Virological including who gets screened and how (home testing/pre-admission clinic, local testing, how many tests? nature of test)</li> <li>◦ Clinical screening</li> </ul> </li> <li>• Role of pre-assessment to facilitate testing</li> </ul> | <ul style="list-style-type: none"> <li>• Number of parents/carers</li> <li>• Place of admission <ul style="list-style-type: none"> <li>◦ Role of hot and cold sites (if no cold sites, is there any rationale for pre-op screening?)</li> <li>◦ Day area versus inpatient area</li> <li>◦ Cubicle versus bay</li> </ul> </li> <li>• PPE required <ul style="list-style-type: none"> <li>◦ For parent/carer</li> <li>◦ For child (and lower age limit)</li> <li>◦ When should PPE be worn</li> <li>◦ 1 metre versus 2 metres</li> </ul> </li> <li>• Screening on admission <ul style="list-style-type: none"> <li>◦ Review by anaesthetist</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Transfer to theatre <ul style="list-style-type: none"> <li>◦ Who accompanying and PPE required</li> <li>◦ Use of reception area outside theatre whilst 'waiting'</li> </ul> </li> <li>• Anaesthetic room <ul style="list-style-type: none"> <li>◦ PPE requirements</li> <li>◦ Ventilation / air change aspects</li> <li>◦ Parent/carer aspects</li> <li>◦ Induction of anaesthesia</li> <li>◦ Transfer from anaesthetic room to operating room</li> </ul> </li> <li>• Theatre <ul style="list-style-type: none"> <li>◦ PPE requirements for non-airway staff</li> <li>◦ What constitutes an AGP</li> <li>◦ Extubation</li> <li>◦ Cleaning</li> <li>◦ Timing between cases / air changes</li> </ul> </li> <li>• Recovery <ul style="list-style-type: none"> <li>◦ PPE requirements</li> <li>◦ Removing supraglottic airways or Guedel airway <ul style="list-style-type: none"> <li>▪ Repatriation to ward</li> </ul> </li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Post-op considerations (inc post-op obs, PPE (day surgery and admissions))</li> <li>• Further considerations for prolonged inpatient admissions inc PPE for parents and repeated testing</li> <li>• Discharge from day surgery and from ward - any safety netting re COVID?</li> <li>• Isolation following discharge</li> <li>• Any other post discharge considerations?</li> </ul> |
|--|--|---|--|

The draft recommendations and [information resources \(parents/carers and young people\)](#) were then reviewed by the Royal College of Paediatrics and Child Health, Royal College of Anaesthetists, Association of Paediatric Anaesthetists of Great Britain and Ireland, Royal College of Surgeons of England, British Association of Paediatric Surgeons and the



Association of Perioperative Practice and endorsed by each of these organisation on 14 July 2020.

## Steering group

- Chair: Sanjay Patel, Paediatric ID, Southampton
  - Alasdair Munro, Paediatric Registrar, Southampton
  - Chris Gildersleve, Paediatric Anaesthetist, President APAGBI
  - Clare Johns, Parent Advisor
  - Conor Doherty, Paediatric ID, Glasgow
  - Daniel Eve, NHSE National Programme of Care Manager, CYP
  - Declan Bays, Senior Mathematical Modeller, Public Health England
  - Emma Andrews, Network Manager, Yorkshire & Humber Paediatric Critical Care Network
  - Emma Bennet, Yorkshire and Humber ODN Children's Surgery Manager
  - Gaynor Evans, IPC Cell, NHSE
  - Hannah Williams, Senior Mathematical Modeller, Public Health England
  - Helen Dunn, Lead Nurse for Infection Prevention Control, GOSH
  - Hermione Lyall, Paediatric ID, Imperial College, London
  - Melissa Ashe, Head of Policy, RCPCH
  - Neil Herbert, Theatre Manager, Alder Hey Children's Hospital
  - Nick Gent, Senior Medical Officer, Public Health England
  - Nigel Hall, Paediatric Surgeon, Southampton
  - Oliver Gee, Paediatric Surgeon, Birmingham Children's Hospital and Chair, Specialised surgery in children CRG, NHSE
  - Paul Randell, Virologist, Imperial College, London
  - Rachel Harwood, Paediatric Surgery Registrar, Alder Hey Children's Hospital
  - Richard Stewart, Paediatric Surgeon, President of BAPS
  - Russell Perkins, Paediatric Anaesthetist and Paediatric Lead for RCOA
  - Sean O'Riordan, Paediatric ID, Leeds
  - Sharon Christie, Paediatric ID, Belfast
  - Simon Clark, Neonatologist; Vice President for Policy, RCPCH
  - Simon Courtman. Paediatric Anaesthetist, SW Clinical Lead for Paediatric Surgery ODN and Secretary, APAGBI
  - Simon Kenny, Paediatric Surgeon and National Clinical Director CYP, NHS England
  - Tina Barnes, Parent Advisor
  - Tracey Williams, President, Association for Perioperative Practice
- 
- \*. RCPCH &Us Voice Bank [www.rcpch.ac.uk/and\\_us](http://www.rcpch.ac.uk/and_us)
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